

Application No. 09/362,631

REMARKS

Claims 20-27 and 52-64 are pending. By this Amendment, claim 20 is amended to more particularly point out Applicants' claimed invention. In particular, Applicants do not intend to narrow claim 20 by the amendment. The amendment is intended to clarify that the "independent reactant streams" are configured to pass through independent reaction zones to form independent product streams. As described in Applicants' specification, independent react streams have been used to indicate separate reactant flows that separately react to form product particles. This is supported by Applicants' specification, for example, at page 31, line 23 to page 32, line 10 and page 48, line 15 to page 49, line 16. No new matter is introduced by the amendments.

The pending claims stand rejected. Applicants respectfully request reconsideration of the rejections based on the following comments.

Rejection Under 35 U.S.C. § 102(b)

The Examiner rejected claims 20-22, 54 and 55 under 35 U.S.C. § 102(b) as being anticipated over U.S. Patent 5,498,446 to Axelbaum et al. (the Axelbaum patent). The Examiner pointed to the abstract and Figs. 1 and 3 for support of the rejection. Applicants maintain that there is a misunderstanding regarding the relationship between the disclosure of the Axelbaum patent and Applicants' claimed invention. Applicants have clarified the scope of the claim. The Axelbaum patent does not prima facie anticipate Applicants' claimed invention. Applicants respectfully request reconsideration of the rejection based on the following comments.

The Axelbaum patent discloses a concentric tube burner, as shown in Figs. 1 and 3. The sodium flow and the halide flow combine prior to reaction since the sodium flow and the halide flow include reactants that are combined for the reaction to take place. See, for example, equations 1 and 2 at column 5. In contrast, Applicants' claimed invention recites "a plurality of

Application No. 09/362,631

independent reactant streams." Applicants have clarified that independent reactant streams are independent in the sense that they **independently** flow to a separate reaction zone for the **independent** formation of product particles. The independent product particles streams then flow to the particle collection apparatus. It is only in the particle collection apparatus that the product particles are combined within a single collector. As claimed by Applicants', each independent reactant stream forms an independent product particle stream while the Axelbaum patent describes flows of different reactant that are combined into a single reactant stream that reacts to form one product particle stream.

The Axelbaum patent does not disclose a plurality of independent reactant streams that are configured to form independent product particle streams, as disclosed and claimed by Applicants. Therefore, the Axelbaum patent does not prima facie anticipate Applicants' claimed invention. Applicants respectfully request withdrawal of the rejection of claims 20-22, 54 and 55 under 35 U.S.C. § 102(b) as being anticipated over the Axelbaum patent.

Rejection Under 35 U.S.C. § 103(a) Over The Axelbaum Patent

The Examiner rejected claim 58 under 35 U.S.C. § 103(a) as being unpatentable over the Axelbaum patent. The Examiner asserted that the difference between the disclosure of the Axelbaum patent and Applicants' claimed invention was the shape of the filter. However, the Axelbaum patent completely fails to disclose significant features of Applicants' claimed invention, as described above. Therefore, the Axelbaum patent does not render Applicants' invention prima facie obvious. Applicants respectfully request reconsideration of the rejection based on the following detailed analysis.

As noted above, the Axelbaum patent fails to disclose a plurality of **independent** reactant streams that are configured to form independent product particle streams. In particular,

Application No. 09/362,631

the Axelbaum patent discloses a single reactant stream associated with a tube burner, although several flow of individual reactants are combined to form the single reactant stream. As described in the Axelbaum patent, the gaseous chlorides react with the sodium vapor such that the separate flows of chlorides and sodium are **not** separately a reactant stream configured to form independent product streams since they do not react until combined. Applicants' claimed apparatus comprises a plurality of **independent** reactant streams that are configured to react separately to form product particles streams.

Furthermore, the Examiner's conclusory assertions regarding the obviousness of changing the size and shape of a component is taken out of context and does not properly account for the fact specific analysis required in a Graham analysis. However, issues regarding the filter are not dispositive since the Axelbaum patent clearly does not teach or suggest a plurality of independent reactant streams configured to form independent product streams.

The Examiner has failed to establish prima facie obviousness of Applicants' claimed invention over the teachings of the Axelbaum patent. Applicants respectfully request withdrawal of the rejection of claim 58 under 35 U.S.C. § 103(a) as being unpatentable over the Axelbaum patent.

Rejections Of Claims 20-22, 54, 55, 63 and 64 Over JP 61-67836

The Examiner rejected claims 20-22, 54, 55, 63 and 64 under 35 U.S.C. § 103(a) as being unpatentable over published Japanese patent application JP 61-67836 (the '836 application). Again, there must be some misunderstanding since the Examiner based the rejection on assertions that an omitted element with a corresponding omission of function is obvious or alternatively that making elements integral has been held to be obvious. As explained below, the differences between Applicants' claimed invention and the disclosure of the '836 application do not involve either omitting an element or making an element integral. Therefore,

Application No. 09/362,631

whether or not these legal assertions have any merit, the Examiner has failed to establish prima facie obviousness. Furthermore, Applicants have amended claim 20 to clarify the claim scope. Applicants respectfully request reconsideration of the rejection based on the following comments.

All claim elements must be taught or suggested by the cited references. See, for example, MPEP 2143.03. As noted by the Examiner on page 4 of the October 17, 2002 Office Action, the JP '836 application fails to disclose a configuration of the particle collector to receive particles from a plurality of reactant streams.

Having admitted this deficiency of the cited reference, the Examiner asserts that "omission of an element with a corresponding omission of function is within the level of ordinary skill." However, with all due respect, the case law cited by the Examiner does not support the broad assertions of the Examiner and furthermore is not relevant to the present fact situation. In particular, the JP '836 application fails to disclose an element, which is not the same at all as the invention omitting an element. **If one leaves off a filter in the apparatus of the JP '836 application, the particles blow into the air. They are not collected by another filter. In the rejection, the Examiner is asserting a complete redesign of the apparatus not the omission of an element.**

Specifically, the JP '836 application does not teach, suggest or motivate a particle collector with a flow configured to receive particles from a plurality of independent reactant streams configured to form independent product particle streams. Since the JP '836 application fails to disclose an element of the claimed invention, the Examiner has not asserted a prima facie case for obviousness.

Furthermore, the Examiner asserted that "it has been held that 'making elements integral was held to have been obvious.'" The Examiner asserts at page 7 that the element made integral is the use of one filter when that particle all have the same size. There must be some

Application No. 09/362,631

confusion since the particle size has no relationship at all with respect to whether or not one filter is used. The particles collected together do not necessarily have the same average particle size or different particle sizes. **The claims do not indicate anything about the particle size.** From a legal standpoint, the idea of making an element integral relates to how an element is related to the overall apparatus and not to whether or not an element is present at all. Therefore, this issue is not relevant to the present discussion.

Furthermore, the JP '836 application **teaches away** from the present invention. On page 3 of the translation, the JP '836 application indicates that the problems to be solved by the invention include "a plurality of filters that collect the fine powder and that are located on the wall surface facing said nozzles of the reaction chamber." The JP '836 application does not teach, suggest or motivate the collection of particles from independent reactant stream configured to form independent product particle streams. The JP '836 application **teaches away** by teaching the desirability of collecting particles with different properties in separate collectors. Also, the JP '836 application does not teach how the apparatus could be modified to collect the particles together.

Since the JP '836 application does not teach, suggest or motivate a particle collector that is configured to collect particles from a plurality of **independent** reactant flows, **the JP '836 application does not render Applicants' claimed invention prima facie obvious.** Applicants respectfully request withdrawal of the rejection of claims 20-22, 54, 55, 63 and 64 under 35 U.S.C. § 103(a) as being unpatentable over published the JP '836 application.

Rejection of Claims 23, 25-27, 52, 53, 58 and 59 Over the JP '836 Application

The Examiner rejected claims 23, 25-27, 52, 53, 58 and 59 under 35 U.S.C. § 103(a) as being unpatentable over the JP '836 application. In particular, the Examiner asserted that the difference between the disclosure of the JP '836 application and Applicants' claimed

Application No. 09/362,631

invention is the provision of a plurality of reaction chambers. However, Applicants maintain that the JP '836 application has significant deficiencies with respect to disclosing Applicants' claimed invention of independent claim 20. In particular, the Examiner has failed to assert prima facie obviousness of Applicants' claimed invention. Applicants respectfully request reconsideration of the rejection based on the following comments.

As noted above, the JP '836 application does not teach, suggest or motivate a particle collector configured to receive particles from a plurality of independent reactant streams configured to form independent product particle streams. Thus, the JP '836 application does not render Applicants' claimed invention prima facie obvious. Furthermore, as noted above, the JP '836 application teaches away from Applicants' claimed invention.

With respect to the specific features of claims 23, 25-27, 52, 53, 58 and 59, the Examiner relies on assertions that it has been held to be obvious to make elements separable and that changes in size, degree and shape have also been found to be obvious. Applicants note that these issues are taken out of context. While Applicants do not agree with the Examiner's position with respect to the specific features of these claims, the issue is presently moot due to the clear deficiencies of the JP '836 application with respect to the claimed collector.

Since the JP '836 application does not teach, suggest or motivate (as well as teaches away from) independent reactant streams configured to form independent product streams, the JP '836 application does not render Applicants' claimed prima facie obvious. Applicants respectfully request withdrawal of the rejection of claims 23, 25-27, 52, 53, 58 and 59 under 35 U.S.C. § 103(a) as being unpatentable over the JP '836 application.

Rejection Over The JP '836 Application and Beaty

The Examiner rejected claims 24, 56, 57 and 60-62 under 35 U.S.C. § 103(a) as being unpatentable over the JP '836 application as applied to claims 23, 25-27, 52, 53, 58 and 59,

Application No. 09/362,631

in view of U.S. Patent 5,194,128 to Beaty et al. (the Beaty patent). The Examiner further asserted that the JP '836 application teaches the production of different particle sizes and compositions. The Examiner cited the Beaty patent for disclosing the manufacture of particles from individual sources or combinations of particles prior to collection. Applicants maintain that there is no motivation to combine the references as suggested since the JP '836 application teaches away from the combination. Thus, the Examiner has failed to assert a case of prima facie obviousness. Applicants respectfully request reconsideration of the rejection based on the following comments.

The JP '836 application teaches the placement of filters/collectors at locations facing the reactant nozzles. See the translation at page 3, under "Problems to be solved by the invention." Furthermore, the injection nozzles (25₁) to (25_n) and the filters (29₁) to (25_n) are arranged in pairs. See the translation at page 4, third paragraph. Thus, the powders from different reaction flows are necessarily separately collected. Since the JP '836 application emphasizes the separate collection of the powders produced in different flow, it teaches away from the combination with the apparatus of Fig. 5 of the Beaty patent. In addition, the combination of the JP '836 application with the apparatus of Fig. 5 of the Beaty patent destroys the intended purpose of the apparatus of the JP '836 patent with respect to separate collection of particles.

The Examiner has pointed to In re Newell, 13 USPO 2d 1248 (Fed.Cir. 1989) to suggest that a person of ordinary skill in the art would have been motivated to make the combination of Beaty and the '836 application because the motivation to make a specific structure is always related to the properties or uses that one skilled in the art would expect the structure to have. However, the Newell case involved a patent applicant that successfully argued that there was no motivation to combine the prior art to make his invention. See In re Newell, at

Application No. 09/362,631

1250. Recognition of the relatedness of structure and function does not supply the motivation without some suggestion to perform the modification.

Indeed, the Newell court pointed out that "The critical inquiry is whether 'there is something in the prior art as a whole to suggest the desirability, and thus the obviousness, of making the combination' ". Id (emphasis in original). As discussed above, there is no suggestion in the cited prior art that suggests the desirability, and hence the obviousness of making the combination. In fact, in the present case, the Office Action has failed to establish prima facie obviousness since there is not motivation to combine the references, since the '836 application teaches away and since the combination destroys the stated function of the apparatus in the '836 application.

Another case cited by the Examiner to support the holding of a motivation to combine similarly found no motivation to combine the cited references. Fromson v. Advanced Offset Plate, Inc., 225 USPQ 26, 31, 32 (Fed. Cir. 1985). The Fromson case cites the identical language of the Newell court with respect to the inquiry regarding the desirability of making the combination. Similarly, the final case cited by the Examiner also determined that the claims were unobvious over the cited art. In re Gyurik 201 USPQ 552, 558 (CCPA 1979). Furthermore, the Gyurik case did not even involve a combination of references. Thus, none of the cases cited by the Examiner support his legal position regarding the combination of references. In addition, the Examiner cited some case law relating to chemical structures for issues relating to mechanical structures, which do not at all relate to issues surrounding chemical structures.

The Examiner has failed to state a legally supported or supportable position to establish prima facie obviousness. There is no motivation to combine the teachings of the JP '836 application with Fig. 5 of the Beaty patent since the JP '836 application teaches away from the combination and since the combination destroys the intended purpose of the structure in the

Application No. 09/362,631

JP '836 application. Since prima facie obviousness has not been established, Applicants respectfully request withdrawal of the rejection of claims 24, 56, 57 and 60-62 under 35 U.S.C. § 103(a) as being unpatentable over the JP '836 application as applied to claims 23, 25-27, 52, 53, 58 and 59, in view of the Beaty patent.

CONCLUSIONS

In view of the foregoing, it is submitted that this application is in condition for allowance. Favorable consideration and prompt allowance of the application are respectfully requested.

The Examiner is invited to telephone the undersigned if the Examiner believes it would be useful to advance prosecution.

Respectfully submitted,



Peter S. Dardi, Ph.D.
Registration No. 39,650

Customer No. 24113
Patterson, Thuent, Skaar & Christensen, P.A.
4800 IDS Center
80 South 8th Street
Minneapolis, Minnesota 55402-2100
Telephone: (612) 349-5746